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dummy wafers and the confusion of the dummy wafers having small numbers of times of use with the dummy wafers having large numbers of times of use. For these reasons, the dummy wafers can be used effectively without any problem when plasma cleaning is carried out.

Furthermore, in accordance with the present invention, the apparatus can have a plurality of processing chambers and can transfer wafers and dummy wafers by the same conveyor. Since plasma cleaning can be carried out by managing the timing of cleaning of each processing chamber by the controller, the cleaning cycle can be set arbitrarily, dry cleaning can be carried out without interrupting the flow of the processing, the processing can be efficiently made and the productivity can be improved.

As described above, according to the present invention, there are effects that the construction of the apparatus is simple, the substrates to be processed are free from contamination and the production yield is high.

What is claimed is:

1. A method of transferring a substrate, using apparatus comprising:

a cassette table for mounting a cassette at a position of which an upper region of the position is open to a cassette transferring path, the cassette receiving plural substrates to be subjected to processing or plural substrates which have been subjected to processing;

two lock chambers for carrying in and carrying out said substrates to be subjected to processing or said substrates which have been subjected to processing;

a single atmospheric transferring device for transferring, one by one, a substrate to be subjected to processing, or a substrate which has been subjected to processing, between said cassette at said position and said two lock chambers, and

opening and closing devices provided respectively at a side of the cassette of said two lock chambers and being opened or closed every carrying-in and carrying-out of said substrate to be subjected to processing or said substrate which has been subjected to processing, so as to change over said two lock chambers to [being] be in an atmosphere or in a vacuum, wherein the method comprises the step of:

carrying in said substrate to be subjected to processing, or carrying out said substrate which has been subjected to processing, one by one, between the two lock chambers in the atmosphere and the cassette at said position, the opening and closing devices being opened and closed every carrying-in and carrying-out of said substrate, one by one.

2. A method of transferring a substrate according to claim 1, wherein one of said two lock chambers has a function of a load lock chamber, and the other of said two lock chambers has a function of an unload lock chamber.

3. A method of transferring a substrate, using apparatus comprising

a cassette table for mounting a cassette at a position of which an upper region of the position is open to a cassette transferring path, the cassette receiving plural substrates to be subjected to processing or plural substrates which have been subjected to processing;

a load lock chamber for carrying in said substrates to be subjected to processing,

an unload lock chamber for carrying out said substrates which have been subjected to processing;

a single atmospheric transferring device for transferring one by one a substrate to be subjected to processing or

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a substrate which has been subjected to processing, between said cassette at said position and said load lock chamber and said unload lock chamber, and

opening and closing devices provided respectively at a side of the cassette of said load lock chamber and said unload lock chamber and being opened or closed every carrying-in and carrying-out of said substrate to be subjected to processing or said substrate which has been subjected to processing, so as to change over said load lock chamber and said unload lock chamber to be in an atmosphere or in a vacuum,

wherein the method comprises the step of

carrying in said substrate to be subjected to processing, or carrying out said substrate which has been subjected to processing, one by one, between said load lock chamber and said unload lock chamber in the atmosphere and said cassette at said position, the opening and closing devices being opened and closed every carrying-in and carrying-out of said substrate, one by one.

4. A method of transferring a substrate according to claim 1 or 3, wherein said cassette is maintained in a transfer installation state without a change of position, and wherein a posture of plural cassettes, which are arranged in a cassette transfer space, are installed in a single row.

5. A method of transferring a substrate according to claim 1 or 3, wherein said cassette is mounted on said cassette table according to any one of a mechanical transferring means and a manual transferring means.

6. A method of transferring a substrate according to claim 1 or 3, wherein said carrying-in and said carrying-out of said substrate are performed to carry in and carry out, one by one, according to any one of a recognition of a product information which is given to said cassette, an information which is sent from an upper rank controlling apparatus, and a demand which is inputted manually.

7. A method of transferring a substrate according to claim 1 or 3, wherein said carrying-in and said carrying-out of said substrate are performed to carry said substrate which has been subjected to processing, to an original position at which the substrate was located prior to processing.

8. A method of transferring a substrate, comprising steps of:

supplying a cassette, which receives plural substrates to be subjected to processing or plural substrates which have been subjected to processing, to a cassette table for mounting said cassette at a position of which an upper region of the position is open to a cassette transferring path,

transferring a substrate to be subjected to processing or a substrate which has been subjected to processing between the cassette and at least one of two lock chambers which carry in and carry out said substrate to be subjected to processing or said substrate which has been subjected to processing, using a single atmospheric transferring device for transferring one by one between said cassette at said position and said at least one of two lock chambers, and

opening and closing using opening and closing devices which open or close respectively at a side of the cassette of said two lock chambers, the opening and closing devices being opened or closed every carrying-in and carrying-out of said substrate to be subjected to processing or said substrate which has been subjected to processing, so as to change over said two lock chambers to be in an atmosphere or in a vacuum,

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wherein between said two lock chambers in the atmosphere and said cassette at said position, said substrate to be subjected to processing or said substrate which has been subjected to processing is carried in or carried out one by one

9 An apparatus for transferring a substrate, comprising a cassette table for mounting a cassette at a position of which an upper region of the position is open to a cassette transferring path, the cassette receiving plural substrates to be subjected to processing, or plural substrates which have been subjected to processing,

two lock chambers for carrying in and carrying out said substrates to be subjected to processing or said substrates which have been subjected to processing,

a single atmospheric transferring device for transferring one by one a substrate to be subjected to processing or a substrate which has been subjected to processing, between said cassette at said position and said two lock chambers, and

opening and closing devices provided respectively at a side of the cassette of said two lock chambers and being opened or closed every carrying-in and carrying-out of said substrate to be subjected to processing or said substrate which has been subjected to processing, so as to change over said two lock chambers to be in an atmosphere or in a vacuum,

wherein between said two lock chambers in the atmosphere and said cassette at said position, said substrate to be subjected to processing or said substrate which has been subjected to processing is carried in or carried out one by one

10 An apparatus for transferring a substrate according to claim 9, wherein said two lock chambers have a function of a load lock chamber or an unload lock chamber.

11 An apparatus for transferring a substrate, comprising: a cassette table for mounting a cassette at a position of which an upper region of the position is open to a cassette transferring path, the cassette receiving plural substrates to be subjected to processing or plural substrates which have been subjected to processing;

a load lock chamber for carrying in said substrates to be subjected to processing;

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an unload lock chamber for carrying out said substrates which have been subjected to processing.

a single atmospheric transferring device for transferring one by one a substrate to be subjected to processing or a substrate which has been subjected to processing, between said cassette at said position and said load lock chamber and said unload lock chamber, and

opening and closing devices provided respectively at a side of the cassette of said load lock chamber and said unload lock chamber and being opened or closed every carrying-in and carrying-out of said substrate to be subjected to processing or said substrate which has been subjected to processing, so as to change over said load lock chamber and said unload lock chamber to be in an atmosphere or in a vacuum,

wherein between said load lock chamber and said unload lock chamber in the atmosphere and said cassette at said position, said substrate to be subjected to processing or said substrate which has been subjected to processing is carried in or carried out one by one.

12 An apparatus for transferring a substrate according to claim 9 or 11, wherein said cassette is maintained in a transfer installation state without a change of position, and wherein a posture of plural cassettes, which are arranged in a cassette transfer space, are installed in a single row.

13 An apparatus for transferring a substrate according to claim 9 or 11, wherein said cassette is mounted on said cassette table according to any one of a mechanical transferring means and a manual transferring means.

14 An apparatus for transferring a substrate according to claim 9 or 11, wherein said carrying-in and said carrying-out of said substrate are performed to carry in and carry out, one by one, according to any one of a recognition of a product information which is given to said cassette, an information which is sent from an upper rank controlling apparatus, and a demand which is inputted manually

15 An apparatus for transferring of a substrate according to claim 9 or 11, wherein said carrying-in and said carrying-out of said substrate are performed to carry said substrate which has been subjected to processing, to an original position at which the substrate was located prior to processing

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